

Application No.: A.12-12-016
Exhibit No.: SDG&E 01a
Witness: Michelle Costello

Application of San Diego Gas & Electric
Company (U-902-M) for Approval of
Demand Response Program Augmentations
and Associated Funding for the Years 2013
through 2014.

Application 12-12-016
(Filed December 21, 2012)

AMENDMENT TO
PREPARED DIRECT TESTIMONY OF
MICHELLE COSTELLO

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

January 31, 2013

1 This amendment to my prepared testimony submitted in Application 12-12-016 is in
2 accordance with direction reflected in the November 16, 2012, letter from Mr. Edward
3 Randolph, Director, (“Energy Division November Letter”) and electronic clarification received
4 from Administrative Law Judge Hymes, dated January 30, 2013¹. In the Attachment, Section 1a)
5 Data Source (page 2) of the Energy Division November Letter it states:

6 “The utilities may provide an update when the Ex Post load impact data based
7 on the Load Impact Protocols becomes available (no later than January 31,
8 2013). Provide a brief summary of the methodologies describing how the Ex
9 Post hourly load impact (MWs) were developed.”

10 The following presents San Diego Gas & Electric Company’s (“SDG&E”) ex-
11 post measurement and evaluation results for 2012, 2011 and 2010 along with the
12 settlement and CAISO report results. These results are included in Table 1 through
13 Table 3 below

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¹ Electronic clarification from Administrative Law Judge Hymes, dated January 31, 2013, to service list A. 12-12-016 et al indicating the utility updates should be served as an amendment to the original testimony.

Table 1 Ex-Post M&E 2012

Program	Date	Event Start	Event end	M&E results	CAISO report	Settlement Results
				Average over Event Period (MW)		
PTR Res	7/20/12	12	18	6.3	13.3	160.1
PTR Com	7/20/12	12	18	0.0	0.1	31.2
ACSAVER	8/8/12	13	16	14.0	13.7	
CBP-DO	8/8/12	14	17	11.0	11.2	11.5
CPP	8/9/12	12	18	15.9	20.9	
CBP-DA	8/9/12	14	17	7.5	9.3	9.4
PTR Res	8/9/12	12	18	3.3	26.1	202.8
PTR Com	8/9/12	12	18	0.0	0.3	27.4
ACSAVER	8/10/12	17	18	18.5	19.8	
CBP-DA	8/10/12	15	18	7.6	9.5	9.5
PTR Res	8/10/12	12	18	3.2	28.1	197
PTR Com	8/10/12	12	18	0.0	8.0	37.5
CPP	8/11/12	12	18	18.4	12.3	
PTR Res	8/11/12	12	18	1.7	33.6	231.1
PTR Com	8/11/12	12	18	0.0	0.0	26.2
ACSAVER	8/13/12	14	17	21.4	18.2	
CBP-DO	8/13/12	14	17	8.5	10.6	10.6
CPPE	8/13/12	14	18	1.2	1.5	
CPP	8/14/12	12	18	25.9	27.1	
CBP-DA	8/14/12	15	18	7.5	8.3	8.5
DBP	8/14/12	14	18	5.1	7.6	
PTR Res	8/14/12	12	18	1.1	6.9	240
PTR Com	8/14/12	12	18	0.0	4.8	29.8
ACSAVER	8/17/12	14	17	22.7	20.6	
CPP	8/21/12	12	18	17.2	20.0	
PTR Res	8/21/12	12	18	3.0	10.0	1,003

Program	Date	Event Start	Event end	M&E results	CAISO report	Settlement Results
				Average over Event Period (MW)		
PTR Com	8/21/12	12	18	0.0	4.5	62.0
CPP	8/30/12	12	18	17.8	20.3	
ACSAVER	9/13/12	15	18	12.6	12.8	
CBP-DO	9/13/12	15	18	10.6	10.5	10.7
ACSAVER	9/14/12	14	17	22.5	21.5	
BIP A	9/14/12	14	17	0.8	1.3	
CBP-DA	9/14/12	15	18	5.7	5.8	5.9
CBP-DO	9/14/12	15	18	10.6	9.9	10.1
CPPE	9/14/12	14	17	0.9	1.4	
DBP	9/14/12	14	18	5.4	9.1	9.1
ACSAVER	9/15/12	14	17	8.8	3.1	
CPP	9/15/12	12	18	14.5	5.5	
PTR Res	9/15/12	12	18	8.3	45.8	298
PTR Com	9/15/12	12	18	0.0	0.0	32.8
CBP-DA	9/17/12	15	18	7.9	8.0	8.4
ACSAVER	10/1/12	15	18	18.0	9.2	
CBP-DA	10/1/12	15	18	4.1	7.0	7.3
CBP-DO	10/1/12	15	18	9.2	9.5	9.5
CPP	10/2/12	12	18	16.5	16.1	
CBP-DA	10/2/12	15	18	4.2	8.0	
DBP	10/2/12	15	18	4.6	8.4	8.4

The column titled “M&E results” in Table 1 includes the measurement and evaluation results which were calculated by independent consulting firms. The column titled “CAISO report” contains the SDG&E preliminary results that were calculated and reported to the CAISO within 7 days after the event. The settlement results represent the load impact results according to the settlement baselines.

The 2012 ex-post results were all calculated using regression analysis. The exact regression models vary by program but these models use data such as temperature and day of the week to forecast what the customer would have used if no event had been called. When control groups were available, they were incorporated into the regression analysis. Otherwise, the regression models used information about customer usage on non-event days to estimate customer loads. Typically, regression models are run for each customer on the program or dynamic rate. The exception to that are ACSaver (a.k.a. SummerSaver) and PTR (a.k.a. Reduce Your Use). Samples are used for both of those programs. This is due to the fact that additional metering on air-conditioners is available for a sample of Summer

Saver customers and because analysis of all PTR customers is impractical due to the large number of customers enrolled.

Program	M&E Methodology
ACSAVER	Regression model with control group. Using a sample
BIP	Regression models without control group
CPP-D	Regression model with control group
CBP-DA	Regression models without control group
CBP-DO	Regression models without control group
CPPE	Regression models without control group
DBP	Regression models without control group
PTR residential	Regression models without control group using a sample
PTR small commercial	Regression models without control group using a sample

PTR program level load impacts for both the residential and small commercial population are not statically significant. SDG&E has identified sub groups within the PTR program; those that signed up for my account only, and those that signed up for my account that opted to receive text and email notifications have been estimated separately. The results for these sub groups are as follows: The PTR results for small commercial customers who proactively requested alerts (opt- in alerts) were not statistically significant and neither were the PTR small commercial results for the population in general. It is for this reason the M&E load impact result for this program is listed as zero in Table 1. Load impacts for the approximately 50,000 residential PTR opt-in text or email alert customers are statistically significant. Load impacts for residential PTR customers who received alerts through MyAccount **but did not request a text or email** were not statically significant and neither were the load impacts of customers not enrolled in MyAccount. Therefore, the M&E results in Table 1 include only the load impacts of residential opt-in text or email alert customers. The CAISO results include SDG&E best preliminary estimates using adjusted baselines of the load reduction of the entire population not just of alert customers which is why the CAISO results are higher than the measurement and evaluation results.

Please note that a statistically significant result does not prove that no load reduction took place. The 90% confidence interval around the PTR residential population result is -18 MW plus or minus 27 MW with the -18 MW representing a load increase. Clearly PTR alerts alone did not inspire customers to increase load. However, even when the warm weather is incorporated into the regression model residential population load on the hottest days is difficult to estimate. Although the margin of error of 27 MW is large on an absolute basis this represents only a percentage error of approximately 2% relative to the entire load of the residential population. This illustrates the difficulties of estimating load

reductions from such a large number of customers, especially if the load reduction itself is very small. The confidence interval for the overall small commercial result is 1.2 MW plus or minus 6.5 MW.

Now that SDG&E has information that the results for the residential and small commercial population are not statistically significant further analysis with the PTR opt-in alert customers will be conducted using comparable customers from the general population as a control group. The extra information from the control group may improve the opt-in customer load reduction estimates.

Tables 2 and 3 below contain the M&E load impact results, load impacts from the CAISO report and settlement results for 2010 and 2011.

Table 2 Ex-Post M&E 2011

Program	Date	Event Start	Event end	M&E results	CAISO report	Settlement Results
				Average over Event Period (MW)		
CBP-DA	7/5/11	14	16	8.3	8.3	8.8
CBP-DO	7/5/11	15	18	11.6	10.9	10.7
CBP-DO	7/6/11	14	17	11.7	9.0	8.2
BIP-A	8/18/11	13	16		2.85	
BIP-B	8/18/11	16	18		0.17	
ACSAVER	8/26/11	15	18	14.4	15.9	
CBP-DA	8/26/11	14	17	10.1	9.4	9.5
CBP-DO	8/26/11	15	18	11.3	11.0	10.8
CPP	8/27/11	12	18	16.9	16.6	
ACSAVER	9/7/11	15	18	22.9	24.0	
CPP	9/7/11	12	18	18.6	17.9	
CBP-DA	9/7/11	15	18	14.0	10.3	10.4
CBP-DO	9/7/11	15	18	15.6	12.6	11.1
ACSAVER	9/9/11	15	18	8.1	9.6	
CBP-DO	9/9/11	15	18	9.7	10.8	10.0
BIP-A	9/9/11			2.4		
ACSAVER	10/12/11	14	17	15.7	9.3	
CBP-DA	10/12/11	14	17	13.3	8.3	8.9
CBP-DO	10/12/11	13	16	10.6	6.1	7.1
ACSAVER	10/13/11	14	17	21.3	9.1	
CBP-DA	10/13/11	14	17	11.2	8.6	9.9
CBP-DO	10/13/11	14	17	10.2	7.5	9.0

Table 3 Ex-Post M&E 2010

Program	Date	Event Start	Event end	M&E results	CAISO report	Settlement Results
				Average over Event Period (MW)		
DemandSmart	7/14/10	14	18	8.6	9.0	4.5
ACSAVER	7/15/10	14	17	16.0	7.6	
CBP-DO	7/15/10	14	17	8.4	10.7	6.5
DemandSmart	7/15/10	14	17	7.9	7.7	3.0
ACSAVER	7/16/10	14	17	21.0	16.4	16.4
CBP-DO	7/16/10	14	17	8.9	11.7	6.5
CBP-DA	7/16/10	14	17	9.8	11.7	7.0
DemandSmart	7/16/10	14	18	7.1	7.1	3.0
ACSAVER	8/17/10	14	17	16.0	9.4	
DemandSmart	8/17/10	14	18	7.1	9.1	4.4
ACSAVER	8/18/10	14	17	20.0	16.2	
CBP-DO	8/18/10	14	17	8.6	10.5	6.9
DemandSmart	8/18/10	14	18	7.5	10.0	3.1
ACSAVER	8/19/10	14	17	17.0	16.0	
CBP-DO	8/19/10	14	17	8.0	9.9	7.0
CBP-DA	8/19/10	14	17	8.7	10.8	7.0
DemandSmart	8/19/10	14	18	7.3	10.5	3.1
CBP-DA	8/20/10	14	17	1.5	7.9	8.0
ACSAVER	8/23/10	14	17	18.0	12.7	
CBP-DO	8/23/10	14	17	9.2	10.1	7.6
DemandSmart	8/23/10	14	18	6.8	9.4	4.5
ACSAVER	8/24/10	14	17	18.0	16.1	
CBP-DO	8/24/10	14	17	9.5	10.2	7.8
CBP-DA	8/24/10	14	14	9.8	10.6	7.3
DemandSmart	8/24/10	15	16	9.2	3.0	4.6
ACSAVER	8/25/10	14	17	16.0	19.4	
CBP-DO	8/25/10	14	17	9.0	9.8	7.6
CBP-DA	8/25/10	14	17	8.6	11.1	7.0
CPP	8/25/10	12	18	21.6	30.1	
DemandSmart	8/25/10	15	16	9.8	9.5	4.7
CBP-DO	8/26/10	14	17	8.2	10.1	7.4
CBP-DA	8/26/10	14	17	10.2	13.0	7.6
CPP	8/26/10	12	18	24.6	25.4	28.4
ACSAVER	9/27/10	15	18	32.0	26.7	
BIP-A	9/27/10	15	18	4.4	4.9	4.9
CBP-DO	9/27/10	14	19	8.0	9.3	5.1
CPP	9/27/10	12	18	11.3	23.1	
DemandSmart	9/27/10	15	18	6.2	6.9	-1.7
ACSAVER	9/28/10	15	18	18.0	16.8	
CBP-DO	9/28/10	14	19	10.1	10.5	6.3
CPP	9/28/10	15	18	17.3	30.0	
ACSAVER	9/29/10	15	18	15.0	13.9	
CBP-DO	9/29/10	17	18	6.7	5.6	4.3

